

AMENDMENTS TO THE DRAWINGS

The attached sheets include changes to Figs. 1 and 4. These sheets, replace the original sheets including Figs. 1 and 4. Figs. 1 and 4 have been amended herein to show descriptive labels in addition to the numerical labels for the simulator 140 and pin 450 respectively. No new matter has been added.

Attachment: Replacement Sheets

REMARKS/ARGUMENTS

Claims 1-7 are currently pending in this application. All pending claims stand rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement, and under §112, second paragraph, as being indefinite. Finally, all claims also stand rejected under 35 U.S.C. 103(a) as being unpatentable over Anthes (U.S. Patent 2,795,755) further in view of Jones (U.S. Patent 3,302,109). Claim 1 has been amended herein to correct a typographical error, and no new matter has been added.

DRAWINGS

The drawings are objected to under 37 C.F.R. §1.83(a) for failure to show (a) pin receptors, (b) prewiring of the mapping board box to receive circuit boards with a variety of pin configurations, (c) a harness port with 56 pins, (d) a mapping board box comprising 560 pin receptors, (e) a generic harness, a harness with 56 wires, and (f) an electronic simulator.

It is respectfully noted that 37 C.F.R. §1.83(a) does not require a detailed illustration of elements that are conventional. This section is reproduced below for convenience:

§ 1.83 Content of drawing: (a) The drawing in a nonprovisional application must show every feature of the invention specified in the claims. **However, conventional features disclosed in the description and claims, where their detailed illustration is not essential for a proper understanding of the invention, should be illustrated in the drawing in the form of a graphical drawing symbol or a labeled representation (e.g., a labeled rectangular box)...**

Thus, the rule makes clear that conventional features whose detailed drawings are not required for proper understanding need not, and indeed **should not**, be illustrated in detail.

Referring to the list of features said to be missing from the figures, it is respectfully submitted that these items are either already illustrated or easily understandable without detailed drawings thereof. For example, pin receptors, harness ports, specific numbers of pins and receptors, and so on, are within the understanding of those of skill in the art and need not be illustrated in detail. In other words, the illustration of a harness (670) in conjunction with a statement (pp. 5-6) that the harness has 56 wires or its port has 56 pins is sufficient to fully describe the feature. Pins, pin receptors, harnesses, and harness ports are

familiar components to those of skill in the art. Moreover, a pin is actually illustrated in Figure 4 (450).

Similarly, regarding the elements of a "mapping board box comprising 560 pin receptors" and an "electronic simulator," these are fully described in accordance with §1.83 by inclusion of appropriate graphical drawing symbols (box 580, simulator 140). Although the box 180 does actually illustrate 560 individual pins, one of skill in the art would be familiar with pins in general and with the appearance of 560 pins. It would not be practical or conducive to understanding to require the illustration of each and every pin, given that pins are already a very familiar item (and are in fact shown in Figure 4), and that it is much easier to be expressly told that there are 560 pins than to try and count 560 individually illustrated pins.

Regarding a mapping board box pre-wired to receive circuit boards with a variety of pin configurations and a generic harness, these elements are not susceptible to detailed illustration in that they are by their very nature generic. A generic harness is one that is not specific to a given circuit (see p. 8). In short, harnesses are illustrated, and the generic designation is stated in connection with the reference number. With respect to the pre-wired board box, it will be appreciated that the pre-wiring will depend on the configurations being used in a specific implementation, and the act of pre-wiring to conform to a specific configuration is within the knowledge and skill of one of skill in the art.

Figures 1 and 4 have been amended herein to show descriptive labels in addition to the numerical labels for the simulator 140 and pin 450 respectively.

In short, in light of the comments and amendments herein, it is respectfully submitted that the drawings illustrate the claimed features with the requisite level of detail under 37 C.F.R. §1.83(a), especially given the state of the art and the knowledge of one of skill in the art.

Moreover, a declaration under 37 C.F.R. §1.132 is submitted herewith in support of the fact that the features said to be lacking from the drawings are either (1) actually already part of the drawings or (2) conventional features whose detailed illustration is not essential

for a proper understanding of the invention. Thus, withdrawal of the objections under §1.83(a) is respectfully requested.

CLAIMS - §112

As noted above, the pending claims stand rejected under 35 U.S.C. §112, first paragraph, as allegedly failing to comply with the enablement requirement, and under §112, second paragraph, as being indefinite. Finally, all claims also stand rejected under 35 U.S.C. 103(a) as being unpatentable over Anthes et al. in view of Jones.

With respect to the rejections under §112 first paragraph, the following terms were indicated as lacking description. Each term is accompanied by an indication of the related description:

Mapping Board Box.

The mapping board box is a box having connectors mapped to a board. As noted by the Office action, it is a box, as illustrated (element 580), but also as shown, it mates with a board (element 510) to connect the board to a harness (670). Although the connectors lie under the board (i.e., between the board and the floor of the box) so that they cannot be seen, they are amply described in the specification. See p. 5, lines 19-20 ("Mapping board box 580 further comprises means, or pin receptors, to receive the pins that are pinned to board 510. ...Each pin receptor is pre-wired to connect with the harness port 590"). See also p. 8, lines 1-5 ("The printed circuit board communicates with an electronic module via the mapping board box and a harness (Step 740). This communication allows for the printed circuit board to be tested, to both ensure that the circuit operates to fulfill its intended purpose and to ensure that the board was correctly pinned.")

In response to the question posed in the action, the mapping board box does include at least one harness port, as specified in the claim and as illustrated in the drawings (see Figure 5, element 590), and as described in the written specification (see p. 5, lines 15-16; "Mapping board box 580 further comprises at least one harness port 590").

In response to the question regarding pre-wiring, and whether the board itself is pre-wired, the drawings and specification fully support the language in the claim indicating that it

is the **mapping board box** is pre-wired to receive circuit boards, not the circuit boards themselves. See p. 5, lines 19-20 ("Mapping board box 580 further comprises means, or pin receptors, to receive the pins that are pinned to board 510. ...Each pin receptor is pre-wired to connect with the harness port 590"). See also p. 8, lines 1-5 ("The printed circuit board communicates with an electronic module via the mapping board box and a harness (Step 740). This communication allows for the printed circuit board to be tested, to both ensure that the circuit operates to fulfill its intended purpose and to ensure that the board was correctly pinned.")

In summary, the box is called a mapping box because it maps the pins of an inserted board (510) to a number of output pins (i.e., at the harness port 590). The box is "prewired" in the sense that the wires connecting the pin receptors to the harness ports 590 are pre-existing and need not be applied by the user. See p. 8, lines 7-20 ("Use of the invention allows automatic routing of signals ... rather than manually mapping the board. ... reducing manual wiring errors.... the complexity of testing electronic modules is reduced by reducing manual wiring and reducing the time required to test the module ...the incidence of wiring errors may also be reduced.")

Pinned Circuit Board

In response to the suggestion that the meaning of "pinned circuit board" is not clear, it is respectfully submitted that the use and structure of pinned circuit boards is well-known in the art. A pinned circuit board is a circuit board that exposed connector pins. In addition, Figure 4 graphically illustrates a cross-section of such a board.

Pins/Pin Receptors

The action indicates a lack of clarity as to how the pins of a board would interact with pin receptors **of the board**. However, this concept is not what is recited in the claims. In particular, claim 1 recites a "**mapping board box** including a plurality of pin receptors adapted to communicate with a circuit printed on a circuit board with pins." Thus, the claims relate to the interconnection of circuit board pins with pin receptors on a mapping board box, not the circuit board itself. In this regard, the use of mating pins and pin receptors is amply described in the specification. See p. 5, lines 19-20, reproduced above.

As noted above, all pending claims also stand rejected under 35 U.S.C. §112 second paragraph, as being indefinite. It is respectfully submitted that there is no lack of clarity in the claims. The action again targets the element of a mapping board box and asks:

- (1) what is a mapping board box?
- (2) Does the box include a harness port and pin receptors? and
- (3) How can a "box" include something else if it is just a box?

Regarding point (1), please see the comments above regarding the support in the specification for a mapping board box. With respect to point (2), as noted above, the box does indeed include a harness port and pin receptors. As discussed above, there is ample support in the specification for this construction. Moreover, the claim itself clearly recites that the box includes these items, and there is thus no lack of clarity on this point.

Regarding point (3), the problem is that the premise is incorrect-- a mapping board box is not "just a box." A mapping board box "includes" a harness port and pin receptors, in the same way that a lunch box "includes" a handle. A lunch box with a handle is still a lunch box -- and a mapping board box with a harness port and pin receptors is still a mapping board box.

CLAIMS - §103

As noted above, the action rejects claims 1-7 as obvious in view of Anthes (U.S. Patent 2,795,755) further in view of Jones (U.S. Patent 3,302,109). It is respectfully submitted that Anthes and Jones do not, alone or in combination, expressly or inherently, teach the limitations recited in the claims.

With respect to claim 1, the action states that Anthes shows a mapping board box (element 5) with pin receptors (element 15). The action alleges that the Anthes device receives tubes having a variety of pin configurations. The action notes that Anthes teaches neither circuit boards nor a harness port. The action analogizes Anthes' tube/chassis combination to a printed circuit board. However, if the claimed "board" is Anthes'

tube/chassis combination as alleged, then the pin receptors of the chassis are actually part of the "board" itself, rather than a means of communicating with a board. In other words, the chassis cannot simultaneously be the board mapping box and the board.

The action goes on to state that the Anthes device includes a small meter, and that if the meter were instead a "really big one," then the meter would have to go elsewhere and would need to be connected to the rest of the circuit via a harness. See pp. 4-5. However, the meter is **not** a really big one, and it is not clear why one of skill in the art would substitute a really big meter for the small meter shown. The action's assertion that doing so would allow one to put the rest of the components in a smaller box is not really a motivation at all -- a really large meter is no easier to put in a separate box than the illustrated small meter. Clarification is requested. In particular, clarification is respectfully requested as to what facts or common knowledge underlie the action's assertion that one of skill in the art would substitute a really large meter in the place of a small one of Anthes.

Because Anthes does not contain the limitations of claim 1 for which it was cited, it is respectfully submitted that a prima facie case of obviousness has not been presented. Favorable reconsideration is requested.

With respect to claims 2, 3, 4, and 6, the action states that the additional limitations of these claims would be "inherent." See action at p. 5. However, inherency is not a gap filler to be used when the desired limitations are absent from a reference. Rather, inherency requires that the examiner provide a rationale or evidence showing that the limitations in question are inevitably and necessarily a part of the reference teachings despite a lack of express mention. See MPEP §2112 (IV) ("Examiner Must Provide Rationale or Evidence Tending to Show Inherency ... The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. ...To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference ...In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art.") (Citations omitted, emphasis added).

Because the action does not state, let alone support with facts or reasoning, that the Anthes device **necessarily** contains the limitations of claims 2, 3, 4, or 6, it is respectfully submitted that a prima facie case of inherency has not been presented. Favorable reconsideration is requested.

With respect to claim 7, which requires an electronic simulator, the action states that element 37 of Jones "is considered to be a simulator as well as a measuring device." There is no indication as to whether it is the examiner or the reference that considers a card reader to be an electronic simulator (or a meter). If the examiner is making such a statement of personal knowledge or other evidence not of record in the nature of official notice, it is requested that some reference or other evidence be provided as to the veracity of this statement. If instead, it is asserted that Jones itself teaches that the card reader 37 is an electronic simulator, then applicants must respectfully disagree. Jones does not contain any teachings to indicate that the card reader is anything other than a card reader.

If for whatever reason the Office continues to feel that the card reader of Jones acts as a simulator in addition to acting as a card reader, clarification is requested. In particular, what activity or entity does Jones' card reader simulate and how exactly does it simulate that activity or entity?

CONCLUSION

For the foregoing reasons, applicants feel that the pending claims are allowable and that the present application is in compliance with the statutes regarding patentability. Applicants thus respectfully submit that the patent application is in condition for allowance. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,



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Date: December 8, 2006